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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,630	05/02/2005	Masayuki Tsumura	SONYJP 33-1028	6327

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LERNER, DAVID, LITTENBERG,
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WESTFIELD, NJ 07090

EXAMINER

GUARINO, RAHEL

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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04/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,630	Applicant(s) TSUMURA, MASAYUKI	
	Examiner Rahel Guarino	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4,5,7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi US, 6,940,923.

Re claim 1, Ohishi discloses a receiving apparatus (fig.14, (broadcast receiver)), comprising: demodulation means (fig. 1 (20, demodulation device), col. 2 lines 37-38) for demodulating a reception signal to a signal on a real axis and a signal on an imaginary axis (col.4 lines 35-50; the digitally converted signal by the digital signal generator (see fig.1) is mapped into I and Q axes (real and imaginary axes, see fig, 2-4), fig.2 shows High C/N ratio and no phase noise, fig.3 shows High C/N ratio and phase noise included and fig. 4 shows Low C/N ratio and phase noise included); C/n ratio calculation means for calculating a c/n ratio with the amplitudes in an amplitude direction of signal points of the demodulation signal demodulated by said demodulation means (col. 2 lines 1-4); and a C/N ratio with the amplitudes in a phase direction of the signal points of the demodulation signal demodulated by said demodulation means (col. 5 lines 17-21, fig.3 shows with the high C/N ratio and phase noise included, the

amplitude varies with the phase direction); does not explicitly disclose phase noise detection means for detecting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction; and indication means for indicating the C/N ratios calculated by said C/N ratio calculation means and the phase noise detected by, said phase noise detection means.

Instead, Ohishi teaches phase noise correction (fig.5 (24)) means correcting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction (col. 9 lines 44-65; when the C/N ratio is high and phase noise included as shown in fig.3, there is phase difference where it is supplied to the phase corrector by means of phase comparator. The symbols are rotated to suppress the phase noise with the assistance of an oscillator signal); and indication means for indicating the C/N ratios calculated by said C/N ratio calculation means and the phase noise detected by, said phase noise detection means (col. 10 lines 41-65).

Therefore, it would have been rendered obvious to one skilled in the art to utilize Ohishi's phase noise correction for the benefit of providing reliable and efficient demodulator that is less susceptible to noise.

Re claim 4, the receiving apparatus as set forth in claim 1, wherein said indication means indicates the phase noise calculated on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction as a numeric value (col. 9 lines 44-65).

Re claim 5, Ohishi discloses a C/N ratio indication method for a receiving apparatus(fig. 1 (20)), the method comprising the steps of: demodulating a reception signal to a signal on a real axis and a signal on an imaginary axis (col.4 lines 35-50; the digitally converted signal by the digital signal generator (see fig.1) is mapped into I and Q axes (real and imaginary axes, see fig, 2-4), fig.2 shows High C/N ratio and no phase noise, fig.3 shows High C/N ratio and phase noise included and fig. 4 shows Low C/N ratio and phase noise included); calculating a C/N ratio with the amplitudes in an amplitude direction of signal points of the demodulation signal demodulated by said demodulation means (col. 2 lines 1-4); and a C/N ratio with the amplitudes in a phase direction of the signal points of the demodulation signal demodulated by said demodulation means (col. 5 lines 17-21, fig.3 shows with the high C/N ratio and phase noise included, the amplitude varies with the phase direction); does not explicitly disclose determining whether phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction; and indicating the C/N ratios calculated by said C/N ratio calculation means and the phase noise determined in said step of determining.

Instead, Ohishi teaches phase noise correcting (fig.5 (24)) means correcting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction (col. 9 lines 44-65; when the C/N ratio is high and phase noise included as shown in fig.3, there is phase difference where it is supplied to the phase corrector by means of phase comparator. The symbols are rotated to suppress the phase noise with

the assistance of an oscillator signal); and indicating the C/N ratios calculated by said C/N ratio calculation means and the phase noise detected (col. 10 lines 41-65).

Therefore, it would have been rendered obvious to one skilled in the art to utilize Ohishi's phase noise correction for the benefit of providing reliable and efficient demodulator that is less susceptible to noise.

Re claim 7, The C/N ratio indication apparatus for the receiving apparatus as set forth in claim 5, wherein said indication means indicates the phase noise calculated on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction as a numeric value (col. 9 lines 44-65).

Allowable Subject Matter

3. Claims 2, 3, 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is 571-270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RG

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611